# 03050206-010
***(Four Hole Swamp)***

## General Description

**Watershed 03050206-010 is located in Orangeburg and Calhoun Counties and consists primarily of *Four Hole Swamp* and its tributaries from its origin to Bull Swamp. The watershed occupies 51,469 acres of the Upper Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Noboco-Dothan-Rains-Wagram-Lakeland series. The erodibility of the soil (K) averages 0.15; the slope of the terrain averages 3%, with a range of 0-6%. Land use/land cover in the watershed includes: 3.09% urban land, 41.96% agricultural land, 12.11% scrub/shrub land, 1.04% barren land, 23.83% forested land, 17.56% forested wetland (swamp), and 0.41% water.**

**This section of Four Hole Swamp originates near the Town of St. Matthews and flows through Bull Pond before accepting drainage from Bay Branch, Flea Bite Creek, Cook Branch, Gin Branch, and Bull Swamp (Little Bull Creek, Gramling Creek, Little Bull Swamp). There are a total of 55.2 stream miles in this watershed. Four Hole Swamp, Bull Swamp, and Gramling Creek are classified FW* (site specific classification requires DO not less than 4.0 mg/l and pH between 5.0-8.5), and the remaining streams are classified FW.**

## Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| E-022 | S | FW* | GRAMLING CK AT CULVERT ON SC 33, 2 MI E OF ORANGEBURG |
| E-076 | S | FW | LITTLE BULL CREEK AT SC 33 BELOW UTICA TOOL CO |
| E-590 | BIO | FW* | BULL SWAMP AT SR 154 |
| E-589 | BIO | FW* | GRAMLING CREEK AT SR 154 |
| E-059 | P | FW* | FOUR HOLE SWAMP AT S-38-50, 5.2 MI SE OF CAMERON |

***Four Hole Swamp (E-059)*** **- This stream was Class B until April, 1992. Aquatic life uses are not supported due to occurrences of copper and zinc in excess of the aquatic life acute standards, including a very high concentration of copper measured in 1993, a high concentration of zinc measured in 1993, and very high concentrations of zinc measured in 1994 and 1996. In addition, there is a significant decreasing trend in pH, a significant increasing trend in turbidity, and very high concentrations of cadmium, chromium, and lead measured in 1993. P,P'DDT was detected in the 1993 and 1995 sediment samples, and P,P'DDE (a metabolite of DDT) was detected in the 1993, 1995, and 1996 samples. Although the use of DDT was banned in 1973, it is very persistent in the environment. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus concentrations suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions.**

***Little Bull Creek (E-076)*** **- This stream was Class B until April, 1992. Aquatic life uses are partially supported based on macroinvertebrate community data. In addition, there are dissolved oxygen excursions, a significant decreasing trend in pH, and a significant increasing trend in turbidity. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus concentrations suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.**

***Bull Swamp (E-590)*** **- This stream was Class B until April, 1992. Aquatic life uses are partially supported based on macroinvertebrate community data.**

***Gramling Creek* - There are two monitoring sites along Gramling Creek, which was Class B until April, 1992. At the upstream site (E-022), aquatic life uses are fully supported, but there is a significant decreasing trend in pH. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Natural conditions in this stream may have contributed to the observed low dissolved oxygen values. This is also a secondary monitoring station and sampling is intentionally biased towards periods with the potential for low dissolved oxygen concentrations. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus concentrations suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions; however a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the downstream site (E-589), aquatic life uses are partially supported based on macroinvertebrate community data.**

***A fish consumption advisory has been issued by the Department for mercury and includes the streams within this watershed (see advisory p.31).***

## Permitted Activities

### *Point Source Contributions*

| *RECEIVING STREAM*<br>*FACILITY NAME*<br>*PERMITTED FLOW @ PIPE (MGD)*<br>*COMMENT* | *NPDES#*<br>*TYPE*<br>*LIMITATION* |
|---|---|
| FOUR HOLE SWAMP<br>WESTVACO CORP./CAMERON LUMBER MILL<br>PIPE #: 001 FLOW: M/R<br>STORMWATER | SCR000889<br>MINOR INDUSTRIAL<br>EFFLUENT |
| GRAMBLING CREEK<br>ROOSEVELT GARDEN APTS<br>PIPE #: 001 FLOW: 0.0676 | SC0029645<br>MINOR DOMESTIC<br>WATER QUALITY |
| GRAMBLING CREEK<br>AMERICAN YARD PRODUCTS<br>PIPE #: 001-005 FLOW: M/R | SCG250130<br>MINOR INDUSTRIAL<br>EFFLUENT |

| *LAND APPLICATION*<br>*FACILITY NAME* | *PERMIT #*<br>*TYPE* |
|---|---|
| TILE FIELD<br>EASTWOOD SD | ND0067288<br>MINOR COMMUNITY |

### *Mining Activities*

| *MINING COMPANY*<br>*MINE NAME* | *PERMIT #*<br>*MINERAL* |
|---|---|
| **BLUE CIRCLE, INC.**<br>**JAMISON CLAY PIT** | **0206-38**<br>**CLAY** |
| **T&N ENTERPRISES**<br>**ELLOREE MINE** | **0942-38**<br>**CLAY** |

## Growth Potential

**Interstate 26 bisects the watershed with interchanges at U.S. Highway 601 and S.C. Highway 33 and should encourage some growth around the interchanges. Rail lines parallel Highways 601 and 33, all of which run out of the City of Orangeburg. U.S. Highway 176 parallels I-26 and runs through the Town of Cameron.**